California Regional Water Quality Control Board
San Diego Region

Terry Tamminen
Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

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October 4, 2004

In reply refer to: ICU:02-0381.05:philj

Mr. L. Patrick Hassey
President and Chief Executive Officer
Allegheny Technologies Incorporated
1000 Six PPG Place
Pittsburgh, PA 15222-5479

Dear Mr. Hassey:

SUBJECT: CLEANUP AND ABATEMENT ORDER NO. R9-2004-0258 FOR DISCHARGES OF WASTE FROM 2710 NORTH HARBOR DRIVE IN SAN DIEGO, CALIFORNIA

Enclosed is Cleanup and Abatement Order (CAO) No. R9-2004-0258. This CAO addresses discharges of waste both to land and San Diego Bay from a site formally occupied by Teledyne Ryan Aeronautical at 2710 North Harbor Drive in San Diego, California. The CAO is issued pursuant to California Water Code (CWC) Section 13304 and directs Allegheny Technologies Inc. to cleanup and abate the effects of the waste discharges described in the CAO findings.

Please note the directives contained in the CAO. Failure to comply with the directives may subject you to further enforcement actions by the Regional Board, including administrative or judicial proceedings for the assessment of civil liability in amounts of up to $10,000 per day; referral to the State Attorney General for injunctive relief; and, referral to the District Attorney for criminal prosecution.

Pursuant to CWC Section 13304, the Regional Board is entitled to reimbursement for all reasonable costs actually incurred by the Regional Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action required by this CAO. Please be aware that you may receive future invoices for additional cost incurred by the Regional Board in overseeing implementation of the requirements of this CAO.

You may contest the issuance of this CAO by requesting a public hearing on the matter before the Regional Board within thirty (30) days of the October 4, 2004 CAO issuance date. You may request that a public hearing be scheduled on this matter at the December 8, 2004 Regional Board meeting by submitting a written request to the attention of Mr. John Phillips, Senior Engineer, at the following address no later than 5:00 pm on Thursday, November 4, 2004.

Mr. John Phillips
Senior Engineer
Industrial Compliance Unit

California Regional Water Quality Control Board
San Diego Region
9171 Sky Park Court, Suite 100
San Diego, California 92123- 4340

Be aware that a request for a hearing does not stay any of the directives in the CAO.

I strongly urge a complete and prompt response to each directive in CAO No. R9-2004-0258. If you have any questions regarding this matter, please contact either of the following staff:

Mr. John Phillips
Senior Engineer
Industrial Compliance Unit
Phone: (858) 627-3928
e-mail philj@rb9.swrcb.ca.gov

Mr. John Anderson
Senior Engineering Geologist
Site Mitigation and Cleanup Unit
Phone: (858) 467-2975
e-mail andej@rb9.swrcb.ca.gov

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

JOHN H. ROBERTUS
Executive Officer

JHR:DTB:sak

Enclosures: (1) Cleanup and Abatement Order No. R9-2004-0258

CC:

Mr. David Merk
Director, Environmental Services
San Diego Unified Port District
3165 Pacific Highway
San Diego, CA 92101-1128

Mr. Edgard Bertaut
Environmental Manager
Allegheny Technologies Incorporated
1000 Six PPG Place
Pittsburgh, PA 15222-5479

Mr. Paul Manasjan
Director of Environmental
Affairs
San Diego County Regional
Airport Authority
P.O. Box 82776
San Diego, CA 92138-2776

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

CLEANUP AND ABATEMENT ORDER NO. R9-2004-0258
FOR
TDY INDUSTRIES, INCORPORATED
TDY HOLDINGS, LLC
TELEDYNE RYAN AERONAUTICAL COMPANY
AND
ALLEGHENY TECHNOLOGIES INCORPORATED

2710 NORTH HARBOR DRIVE, SAN DIEGO, CALIFORNIA

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

REGULATORY AND FACTUAL BACKGROUND

1. **SITE LOCATION:** Forty-four acres of land at 2710 North Harbor Drive in San Diego, located between the Lindbergh (San Diego) Airport to the north and Convair Lagoon in San Diego Bay to the south (hereinafter refereed to as "the Site"), was used for the aerospace component and manufacturing business from the early 1940s through mid 1999.

2. **SITE OPERATORS:** From its inception in the early 1940s until approximately 1969, Ryan Aeronautical Company was the operator of the Site. In 1969, Ryan Aeronautical Company became known as Teledyne Ryan Aeronautical Company after becoming a wholly owned subsidiary of Teledyne Industries, Inc. In 1996, Teledyne Industries, Inc. merged with Allegheny Ludlum Corporation, and together became known as Allegheny Teledyne Incorporated. Allegheny Teledyne Incorporated was later changed to Allegheny Technologies Incorporated. Teledyne Industries, Inc. changed its name to TDY Industries, Inc. (TDY) in 1999. These entities (excluding Ryan Aeronautical Company) are jointly referred to as "Discharger(s)" in this Order.

3. **SITE LEASE AGREEMENTS:** Ryan Aeronautical Company originally leased the Site from the City of San Diego in 1939. In 1963 the lease was transferred from the City of San Diego to the San Diego Unified Port District (Port District). The site was leased by subsequent Dischargers from the Port District, in its capacity as trustee of tidelands for the State of California.

4. **SITE OPERATIONAL STATUS:** Manufacturing operations ceased in 1999 when the assets of TDY, with the exception of buildings, were sold to Northrop Grumman Corporation, who relocated the assets from the Site. TDY retained responsibility for the Site, including maintenance of the buildings and other structures until the Site was vacated in November 2002.

5. **SITE OWNERSHIP TRANSFER:** The Port District, as the trustee of tidelands for the State of California, was the owner of the Site up to August 13, 2003. On that date the Port District transferred ownership and responsibility for the Site to the San Diego County Regional Airport Authority (Airport Authority).

6. **INDUSTRIAL STORM WATER NPDES PERMIT:** Beginning on April 6, 1992, the discharge of storm water from the Site was regulated under Order No. 91-13, General Permit No. CAG000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity Excluding Construction Activities* (General Permit). The discharge of storm water from the site is currently regulated under Order No. 97-03-DWQ which superceded the requirements of Order No. 91-13.

7. **STORM WATER CONVEYANCE SYSTEM:** Storm water from the Site is discharged through six storm water conveyance systems (SWCS) that drain to Convair Lagoon and San Diego Bay. From west to east, the storm drain system includes:

   a. A 54-inch diameter SWCS that originates upstream from the Site and receives runoff from western portions of the Site;

   b. A western 30-inch diameter SWCS that originates onsite and receives runoff from the south-central portion of the Site;

   c. A 60-inch diameter SWCS that originates upstream from the Site and receives runoff from the central portion of the Site;

   d. An eastern 30-inch diameter SWCS that originates onsite and receives runoff from the east-central portion of the Site;

   e. An 18-inch diameter SWCS that originates onsite and receives runoff from the eastern portion of the Site; and

   f. A 36-inch diameter SWCS that originates onsite and receives runoff from the eastern portion of the Site.

8. **PAST DISCHARGES OF PCBs:** In 1986, the Regional Board found that Teledyne Ryan Aeronautical contributed to a condition of pollution in Convair Lagoon by discharging waste containing polychlorinated biphenyls (PCBs), several trace metals, and volatile organic chemicals into and from the SWCS to San Diego Bay. The Regional Board issued Cleanup and Abatement Order (CAO) No. 86-92 with amendments, directing Teledyne Ryan Aeronautical to terminate discharges of waste and to remediate the contaminated marine sediment in Convair Lagoon. CAO 86-92 with amendments required extensive sampling and cleanup of waste from the onsite SWCS as well as remediation of the PCB contaminated marine sediment in the Convair Lagoon portion of San Diego Bay. Work to cleanup or replace portions of the onsite SWCS was concluded in1998.

9. **SAND CAP CONSTRUCTION:** On December 14, 1995, the Regional Board adopted Order 95-123, *Waste Discharge Requirements for Teledyne Ryan Aeronautical, Dredge and Fill Activities at Convair Lagoon, San Diego County*, establishing requirements for Teledyne Ryan's construction of a sand cap in Convair Lagoon to physically isolate PCB contaminated marine sediments greater than 4.6 mg/kg from benthic organisms and San Diego Bay. Addendum No. 2 to Order 95-123 contains findings describing Teledyne Ryan Aeornatical's use of source material from the Carroll Canyon CALMAT facility to construct the sand cap. The chemical analytical data provided to characterize the sand cap source material showed PCB concentrations below detection limits prior to placement during construction of the sand cap. Construction of the sand cap was completed in June 1998. The Regional Board eventually rescinded CAO 86-92 in 2003 following construction of the sand cap.

10. **SAND CAP REGULATION:** In May 1998 the Regional Board adopted waste discharge requirements Order No. 98-21, *Waste Discharge Requirements for Teledyne Ryan Aeronautical, Closure and Post-Closure Maintenance of the Convair Lagoon Sand Cap, San Diego Bay*. Order No. 98-21 established requirements for the long-term maintenance and monitoring of the sand cap. The monitoring requirements of Order No. 98-21 include sand cap and SWCS sediment sampling and analysis.

11. **NOTICE OF TERMINATION DENIAL:** On August 28, 2003, TDY requested termination of enrollment for coverage under the Industrial Storm Water General Permit, Order No. 97-03-DWQ. By letter dated September 2, 2003 the Regional Board denied the request due to the presence of PCB's in the facility SWCS and continuing discharges of PCB contaminated sediments to San Diego Bay.

ONGOING PCB DISCHARGES

12. **SWCS PCB DISCHARGES:** PCB concentrations have continued to be found in the SWCS in sampling events conducted after the cleanup and/or replacement of the onsite SWCS sections was concluded in 1998. SWCS sampling was conducted at various times between 1999 – 2003 by the Port of San Diego and TDY Industries. PCB concentrations were found in all of the storm drains sampled. Elevated PCB concentrations above the 4.6 mg/kg cleanup level established in CAO 86-92 were found in 17 out of 47 sediment samples taken from the SWCS since 1999. PCBs found in the SWCS are conveyed and discharged to Convair Lagoon and San Diego Bay during storm events. The SWCS sampling results are summarized below:

STORM DRAIN	NUMBER OF PCB SAMPLE VALUES 1999 - 2003	RANGE OF PCB VALUES (mg/kg)	NUMBER OF ELVATED PCB VALUES ABOVE 4.6 mg/kg
East 30 Inch Drain	19	0.02 – 33.8	7
60 Inch Storm Drain	15	0.2 - 27	6
54 inch Storm Drain	9	0.02 – 7.34	1
36 inch Storm Drain	3	2.8 – 22.34	2
18 inch Storm Drain	1	11.02	1
Total Samples	**47**		**17**

13. **PCB ACCUMALATION ON SAND CAP:** SWCS PCB discharges from the Site SWCS are resulting in the accumulation of PCBs on the surface of the Convair Lagoon Sand Cap in San Diego Bay. In September 1998, Teledyne Ryan Aeronautical submitted a technical report entitled *"Convair Lagoon Sand Cap, San Diego Bay, Post Closure Inspection Report"*. The analytical results provided in the report for sediment samples collected from a core at the "Center" monitoring station (in July 1998) had PCB concentrations between 0.830 and 1.1 mg/kg. In November 2000, TDY industries submitted a technical report entitled "Convair Lagoon San Cap Thickness". The analytical results provided in the report from four sediment samples had PCB concentrations in excess of 1 mg/kg ranging from 1.77 to 15.8 mg/kg. Sediment sample results from annual monitoring reports submitted by TDY Industries for the years 2000 – 2003 collected from the West, Center and Eastern sand cap monitoring stations had PCB concentrations ranging from 0.52 – 99.5 mg/kg in the upper core samples.

14. **NPDES PERMIT VIOLATION**: The continuing discharge of PCBs from the Site into and from the SWCS to Convair Lagoon and San Diego Bay is a violation of Prohibition A.2 of Order No. 97-03-DWQ. Prohibition A.1 states: " Except as allowed in Special Conditions (D.1.) of this General Permit, materials other than storm water (non-storm water discharges) that discharge either directly or indirectly to waters of the United States are prohibited….." PCB contaminated sediment continues to be discharged into the SWCS. The sediment monitoring conducted from 2000 – 2003 found PCB contaminated sediment in many onsite catch basins and in the SWCS associated with those catch basins.

15. **NPDES PERMIT VIOLATION:** The discharge of PCBs into and from the SWCS to Convair Lagoon and San Diego Bay is a violation of Prohibition A.2 of Order No. 97-03-DWQ. Prohibition A.2 states that: "Storm water discharges and authorized non-storm water discharges shall not cause or threaten to cause a pollution, contamination, or nuisance."

    a. PCBs are a family of organic compounds that are produced by substituting chlorine atoms for hydrogen atoms on a biphenyl molecule. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were commonly used in onsite industrial applications including electrical, heat transfer, and hydraulic equipment. PCBs may have also been used as a plasticizer in paints used at the Site. Concern over the toxicity and persistence in the environment of PCBs led Congress in 1976 to enact section 6(e) of the Toxic Substances Control Act (TSCA) that included among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs.

    b. PCBs tend to be sorbed to bay bottom marine sediments and are transported and deposited with bay sediments. Bay sediment re-suspension can reintroduce PCBs into the aquatic environment and extend their environmental impacts. Fish and other aquatic organisms are exposed to PCBs through direct intake of contaminated water and sediments, or through consumption of contaminated food. PCBs have the potential to bioaccumulate in organisms and biomagnify through the food chain.

c. The accumulation of PCBs in the sediment is a potential threat to human health primarily by consumption of fish and shellfish contaminated by chemicals in the sediment through the processes of bioaccumulation and biomagnification. Other potential pathways of exposure include direct contact with contaminated sediments by swimmers or divers and incidental ingestion of contaminated sediment or associated water by swimmers or divers.

d. The uncontrolled discharge of PCBs from the Site to San Diego Bay threatens to cause a condition of pollution and contamination in San Diego Bay.

16. **NPDES PERMIT VIOLATION:** The discharge of PCBs from the Site into and through the SWCS to Convair Lagoon and San Diego Bay is a violation of Effluent Limitation B.3 of Order No. 97-03-DWQ. Effluent Limitation B.3. states that: "Facility operators covered by this General Permit must reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges through implementation of BAT for toxic and non-conventional pollutants and BCT for conventional pollutants. . . ." TDY failed to implement adequate BMPs to prevent the discharge of PCBs and PCB contaminated sediment to its SWCS and to San Diego Bay. PCBs continue to be present in the SWCS, as monitoring conducted between 1999- 2002 demonstrates. PCBs continue to be discharged from the SWCS into Convair Lagoon and San Diego Bay.

17. **BASIN PLAN PROHIBITION VIOLATION:** The discharge of PCBs into and from the SWCS to Convair Lagoon is a violation of Waste Discharge Prohibition No. 1 of the Water Quality Control Plan for the San Diego Region (9) (Basin Plan). Prohibition No. 1 states "The discharge of waste to waters of the state is a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code Section 13050, is prohibited."

OTHER DISCHARGES

18. **WASTE DISCHARGES TO SOIL AND GROUND WATER:** Wastes discharges to soil and ground water of various volatile organic chemicals and heavy metal constituents have occurred, or are suspected to have occurred, from the following aerospace component and manufacturing business processes and equipment: solvent degreasing, parts cleaning, metal cutting, foundry operations, storage of chemical products, hazardous waste storage, chemical process lines, electrical vaults, engine testing, photo processing, sand blasting, explosives forming, painting, air compressors, autoclaves, steam generators, chemical mixing, welding, and equipment maintenance.

a. In 1988, tetrachloroethylene (PCE) concentrations up to 7,300 mg/kg were detected in soil south of Building 120 during a storm drain removal project. Although some contaminated soil has been removed from this area, neither the full extent nor the source of PCE contamination in this area has been identified.

b. In 2002, PCE concentrations as high as 14,000 µg/L were found in ground water in the vicinity of degreasers located in Building 120. Degreasers were used in various locations in this building including Degreaser 11 in the south-central area of the building, Degreaser

76 in the northeast corner of the building and Degreaser 77 in the southeastern corner of the building. The extent of the chlorinated plume in the ground water located beneath these areas has not been defined.

c. In 2002, investigation of an area in the vicinity of Building 158, near a former chromic acid tank, revealed hexavalent chromium concentrations in ground water as high as 52,000 µg/L. The extent of the hexavalent chromium plume has not been defined.

19. **BASIN PLAN PROHIBITION VIOLATION:** The discharges of volatile organic chemicals and heavy metals are a violation of Waste Discharge Prohibition No. 1 of the Water Quality Control Plan for the San Diego Region (9) (Basin Plan). Prohibition No. 1 states "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code Section 13050, is prohibited."

a. Chromic acid is used in the aerospace component and manufacturing business for metal plating and electrolytic deposition of chromium coatings on aircraft parts to increase resistance to corrosion. Chromic acid is the common name for chromium anhydride (CrO_3) and contains hexavalent chromium (Cr^{6+}). Hexavalent chromium is known to cause cancer in humans when inhaled.

b. Tetrachloroethylene (PCE) is a volatile organic chemical used in the aerospace component and manufacturing to remove grease from fabricated metal. The USEPA classifies PCE as a probable human carcinogen.

c. Site discharges of volatile organic chemicals such as tetrachloroethylene (PCE) and heavy metals such as hexavalent chromium to soil and ground water may ultimately reach San Diego Bay through migration of ground water containing these waste constituents into storm drains or into backfill surrounding storm drains. Soil containing these waste constituents can also enter storm drains either from the surface or through breaches in the SWCS. The regional ground water gradient is directed toward San Diego Bay. Because of the proximity of the Site to San Diego Bay, there is a potential for ground water containing these waste constituents to migrate directly into the Bay.

d. These potential discharges to San Diego Bay threaten to cause applicable water quality objectives in San Diego Bay to be exceeded and pollution conditions in San Diego Bay.

STATUTORY AND REGULATORY FINDINGS

20. **LEGAL AND REGULATORY AUTHORITY:** This Order is based on (1) the federal Clean Water Act; (2) the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000); (3) applicable state and federal regulations; (4) all applicable provisions of statewide Water Quality Control Plans adopted by the State Water Resources Control Board and the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) adopted by the Regional Board including beneficial uses, water quality objectives, and implementation plans; (5) State Water Board policies, including State Water Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in*

California) and Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304*); and (6) relevant standards, criteria, and advisories adopted by other state and federal agencies.

21. **CEQA EXEMPTION:** This enforcement action is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15321 (Enforcement Actions by Regulatory Agencies), Chapter 3, Title 14 of the California Code of Regulations.

ORDER DIRECTIVES

IT IS HEREBY ORDERED that, pursuant to Section 13304 of the California Water Code, Teledyne Ryan Aeronautical Company, TDY Holdings LLC, TDY Industries, Inc., and Allegheny Technologies Inc. (hereinafter Discharger(s)), shall comply with the following directives:

A. CLEANUP AND ABATE DISCHARGES

1. ***Duty to Comply -*** The Discharger(s) shall take all corrective actions[1] necessary to:

   a. Investigate, cleanup, and abate discharges of PCBs, volatile organic chemicals, and heavy metals (hereinafter waste constituents) at the Site;

   b. Achieve compliance with site-specific cleanup levels as prescribed by the Regional Board and;

   c. Terminate illicit waste discharges to the onsite storm water conveyance system (SWCS) and achieve compliance with the terms and conditions of Order No. 97-03-DWQ, General Permit No. CAG000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity Excluding Construction Activities*.

B. SITE INVESTIGATION AND CHARACTERIZATION

1. ***Conceptual Site Model -*** The Discharger(s) shall begin site investigation and characterization activities by first constructing a conceptual site model (CSM)[2] based on

[1] Corrective Actions include the following phases of cleanup and abatement described in Directives B through F of this Cleanup and Abatement order: (1) Site Investigation and Characterization phase; (2) Remedial Investigation and Feasibility Study phase; (3) Remedial Action Plan Implementation phase; and (4) Cleanup and Abatement Completion Verification phase.

[2] The Conceptual Site Model (CSM) is a narrative and graphical description of the characteristics of the site that may affect the distribution and migration of waste constituents. Development of a CSM is an important first step in planning and scoping any site assessment designed to determine the potential impacts of contamination on public health and the environment. In documenting current site conditions, CSMs are used as a planning tool during the environmental site investigation phase to allocate finite financial and personnel resources to address data gaps, identify sources of contamination, release mechanisms, exposure pathways, and human or ecological receptors.

available site-specific data on the occurrence of waste constituents in the storm water conveyance system (SWCS), soil, and ground water. The CSM shall identify the source(s) of PCBs, volatile organic chemicals (VOCs), and heavy metals, the waste constituent composition and concentration, affected media (soil and water, three dimensional spatial extent and temporal variability of the waste constituents, routes of waste constituent migration, and the location and exposure points of actual and potential receptors (humans, animals, and plants).

The CSM shall be refined and updated as site characterization data becomes available. The initial CSM shall include a discussion of the level of uncertainty of conclusions, outline data gaps in the initial CSM, and describe the additional work needed to complete the CSM. Updates to the CSM shall be included in all future technical and monitoring reports submitted. The initial CSM shall be submitted to the Regional Board with the workplan described in Directive B.2.

2. ***Site Investigation and Characterization Workplan*** - The Discharger(s) shall develop and submit to the Regional Board by **January 28, 2005**, a workplan designed to guide the collection of information to produce the Site Investigation and Characterization Report described in Directive B.3.

   a. *Conceptual Site Model (CSM)* - The workplan shall include the initial CSM described in Directive B.1. and a description of proposed actions including field methodologies, chemical analyses methods, sampling locations and proposed monitoring well installations. Contingencies for collection of additional samples should be proposed in the work plan.

   b. *Report Completion Schedule* - The workplan shall include a schedule for completion of all activities and submission of a final Site Investigation and Characterization Report described in Directive B.3.

   c. *Regional Board Notification* - The workplan shall provide for Regional Board notification at least two weeks before the start of field work.

   d. *Presumptive Remedies* - Presumptive remedies[3] shall be considered during the development of the workplan so that data needed for selection and design of remedial alternatives may be collected during site characterization.

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[3] Presumptive remedies are preferred technologies based on USEPA's scientific and engineering evaluation of performance data on remedial technology implementation in the Superfund Program. The five types of sites for which there is USEPA presumptive remedy guidance are: Volatile Organic Compounds (VOCs) in Soils, Municipal Landfills, Metals in Soils, Wood Treaters, and Contaminated Ground Water. The objective of USEPA's presumptive remedies initiative is to use the experience gained by USEPA in the Superfund Program to streamline site investigation and speedup selection of cleanup actions. Additional information on presumptive remedies can be obtained from USEPA's website at http://www.epa.gov/superfund/resources/presump.

e. *Workplan Modification*- The Discharger(s) shall modify the workplan as requested by the Regional Board.

f. *Workplan Implementation* - The Discharger(s) shall implement the workplan sixty (60) days after submission of the workplan, unless otherwise directed in writing by the Regional Board. Before beginning these activities the Discharger(s) shall:

(1) Notify the Regional Board of the intent to initiate the proposed actions included in the workplan submitted; and

(2) Comply with any conditions set by the Regional Board, including mitigation of adverse consequences from cleanup activities.

3. ***Site Investigation and Characterization Report -*** The Discharger(s) shall prepare and submit a Site Investigation and Characterization Report, on a schedule agreed to in writing by the Regional Board, describing the final results of the site investigation and characterization study. The Report shall contain the following information:

a. *Conceptual Site Model* – The Report shall contain an updated CSM based on the results of the site investigation and characterization study;

b. *Source Characterization* - The Report shall describe the results of an investigation of all potential sources of waste constituent discharges to the soil, ground water and storm water conveyance system based on historical records of operations, site reconnaissance, and previous sampling studies. Potential sources that should be investigated include tanks, drains, sumps, areas of stained ground, container storage areas, transformers, and other areas where waste constituents were handled, stored, or used. All sources of waste constituent releases shall be located on a site map at a scale of 1 inch = 200 feet or larger, with an appropriate contour interval to depict site topography. Individual maps should be developed for different classes of waste constituents (e.g., VOCs, PCBs, and heavy metals). A combined map shall also be included showing all classes of waste constituents on a single map.

c. *Storm Water Conveyance System Characterization (SWCS)* - The Report shall characterize the presence of waste constituents in loose and cemented sediment found in the SWCS (including catch basins tributary to the SWCS). The report shall also address the relationship of tidal influences in the SWCS to sediment samples collected from the SCWS. All onsite storm drains and storm drain sumps shall be located on a site map at a scale of 1 inch = 200 feet or larger, with an appropriate contour interval to depict site topography.

d. *Geologic Characterization* - The Report shall characterize the subsurface geology, the hydrogeologic characteristics and preferential pathways that may affect ground water flow and contaminant migration.

e. *Ground Water Flow Characterization* – The Report shall describe the rate(s) and direction(s) of local ground water flow, in both the horizontal and vertical dimension, for all water bearing units potentially affected by the waste constituents from the Site.

f. *Extent of Waste Constituent Characterization* – The Report shall characterize the lateral and vertical extent of each waste constituent in soil and ground water to the background[4] value for that waste constituent.

g. *Ground Water Monitoring Wells* - The Report shall describe the location of existing monitoring wells and the proposed location of additional monitoring wells needed to characterize the types of waste constituents present, the concentrations of waste constituents and their lateral and vertical extent in ground water. Methods for purging and sampling monitoring wells must be capable of providing representative samples of ground water for detecting the waste constituents of interest.

h. *Field Methodologies* – The Report shall describe the field methodologies used for drilling, soil sampling, ground and surface water sampling, and SWCS sampling, well and peizometer construction, geophysical surveys, and other activities.

i. *Chemical Analyses*- The Report shall describe the laboratory analytical methods and protocols used for each environmental medium including soil, soil vapor, waste or ground water. The suite of chemical analyses must be adequate to identify the full range of site-specific waste constituents. Records of chemical use or disposal shall be evaluated to provide documentation that all of the waste constituents of concern have been identified.

j. *Sample Locations and Number* – The locations, type, and number of samples shall be identified and shown on a site map and cross sections. The number of samples and suite of chemical analyses must be sufficient to identify the nature of waste constituent sources, to define the distribution of waste constituents in the subsurface and the SWCS, and to provide data for risk assessment, remedy selection, and remedial design. In addition samples shall be collected to evaluate physical properties of soils and aquifer materials. All sample data shall be presented in tabular form, to include the sample result, sample medium, location, depth, sampling method, analyses and rationale for the method.

C. INTERIM REMEDIAL ACTIONS

1. ***Take Interim Remedial Actions -*** The Discharger(s) shall take interim remedial actions as necessary to abate or correct the actual or potential effects of the unauthorized releases described in this cleanup and abatement order. Interim remedial actions can occur concurrently with any phase of the site investigation or remedial action.

[4] "Background" means the concentrations or measures of constituents or indicator parameters in water or soil that have not been affected by waste constituents from the Site.

2. ***Interim Remedial Actions -*** Interim remedial actions include but are not limited to:

   a. Excavation and disposal of contaminated soil:
   b. Excavation and treatment of contaminated soil:
   c. Pumping and treatment of ground water to remove dissolved constituents; and
   d. Vacuum extraction of waste constituents from soil, ground water and the SWCS.

3. ***Regional Board Notification -*** Before taking interim remedial action, the Discharger(s) shall notify the Regional Board of the proposed action and comply with any requirement that the Regional Board sets.

D. REMEDIAL INVESTIGATION AND FEASIBILITY STUDY (RIFS)

1. ***Remedial Investigation and Feasibility Study (RIFS) Workplan -*** The Discharger(s) shall, using information in the Site Investigation and Characterization Report, prepare a workplan for the development of a RIFS as described in Directive D.2. The Dischargers shall submit the RIFS workplan to the Regional Board within sixty (60) days following submission of the Site Investigation and Characterization Report, unless otherwise directed in writing by the Regional Board.

   a. The workplan shall include the proposed actions and a schedule for their completion and submission of a final RIFS described in Directive D.3.

   b. The Discharger(s) shall modify the workplan as requested by the Regional Board.

2. ***Workplan Implementation -*** The Discharger(s) shall commence with implementation of the RIFS workplan no later than 60 days after submission of the workplan, unless otherwise directed in writing by the Regional Board. Before beginning these activities the Discharger(s) shall:

   a. Notify the Regional Board of the intent to initiate the proposed actions included in the workplan submitted; and

   b. Comply with any conditions set by the Regional Board.

3. ***Remedial Investigation and Feasibility Study (RIFS) -*** The Dischargers shall prepare and submit a RIFS, on a schedule agreed to in writing by the Regional Board. The RIFS shall contain the following information:

   a. *Remedial Investigation* - An assessment of the actual and potential effects, of the waste constituents discharged at the Site, on ground and surface water quality and beneficial uses including, but not limited to, the following considerations:

      (1) The physical and chemical characteristics of the waste constituents discharged at the Site, including their toxicity, persistence, and potential for migration in water,

soil, and air;

(2) The hydrogeologic characteristics of the Site and the surrounding area where the waste constituents have migrated or may migrate;

(3) The rate and direction of ground water flow in both the horizontal and vertical dimension, for all water bearing units potentially or actually affected by the waste constituents from the Site;

(4) The proximity of the Site to San Diego Bay, a SWCS tributary to San Diego Bay, and the Convair Lagoon Sand Cap;

(5) The potential for health risks caused by human exposure to the waste constituents;

(6) The potential for damage to aquatic life and wildlife caused by exposure to the waste constituents; and

(7) The persistence and permanence of the potential adverse effects.

b. *Feasibility Study* - A feasibility study to evaluate alternatives, including the cost and effectiveness of each alternative, for the cleanup or remediation of the waste constituents to:

(1) Attain a range of applicable soil, ground water and SWCS cleanup levels between background water quality conditions and alternative cleanup levels derived by applying the conditions set forth in Title 23, Chapter 15, Article 5, Section 2550.4. Alternate cleanup levels shall not unreasonably affect present and anticipated beneficial uses of waters of San Diego Bay and not result in water quality less than that prescribed in the Water Quality; and Control Plans and Policies adopted by the State and Regional Board.[5]

(2) Ensure that waste constituents discharged into and through the SWCS at the Site are reduced to levels commensurate with implementation of best available technology (BAT) for toxic and non-conventional pollutants and best conventional technology (BCT) for conventional pollutants.

[5] 23 CCR 2550.4 (c) provides that the Regional Board may establish a cleanup level for a constituent of concern that is greater than the background value of that constituent only if the Regional Board finds that it is technologically or economically infeasible to achieve the background value for that constituent and that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the cleanup level greater than background is not exceeded. In making this finding, the Regional Board will consider the factors specified in section 2550.4(d), the Remedial Investigation and Feasibility Study submitted pursuant to Directive D of this cleanup and abatement order, monitoring data submitted by the discharger to support the proposed cleanup level greater than background, public testimony on the proposal, and any additional data or information.

(3) Ensure that discharges into and through the SWCS at the Site do not contain waste constituents that will accumulate to toxic levels in San Diego Bay waters, marine sediment or biota.

c. *Recommended Remedial Alternative* - A recommended alternative for the cleanup or remediation of the waste constituents.

E. REMEDIAL ACTION PLAN IMPLEMENTATION

1. ***Remedial Action Plan (RAP) -*** The Discharger(s) shall submit a RAP to the Regional Board within sixty (60) days following submission of the Remedial Investigation and Feasibility Study (RIFS), unless otherwise directed in writing by the Regional Board. The RAP shall contain the following information:

   a. *Implementation Activities* - A detailed description of all activities planned to implement the recommended alternative for the cleanup or remediation of the waste constituents described in the final RIFS and a schedule for their completion; and

   b. *Monitoring Activities* - A monitoring program to demonstrate the effectiveness of the RAP. The monitoring program shall be effective in determining compliance with the cleanup levels and in determining the success of the remedial action measures.

2. ***Remedial Action Plan (RAP) Implementation -*** In the interest of minimizing environmental contamination and promoting prompt cleanup, the Discharger(s) may begin implementation of the RAP sixty (60) calendar days after submittal to the Regional Board, unless otherwise directed in writing by the Regional Board. Before beginning RAP implementation activities, the Discharger(s) shall:

   a. Notify the Regional Board of its intention to begin cleanup; and
   b. Comply with any conditions set by the Regional Board, including mitigation of adverse consequences from cleanup activities.

3. ***Remedial Action Zone -*** The Discharger(s) shall implement remedial action measures that ensure that the waste constituents achieve their respective cleanup levels at all monitoring points and throughout the zone affected by the waste constituents, including any portions thereof that extend beyond the Site property boundary, by removing the waste constituents or treating them in place.

4. ***Implementation Schedule -*** Implementation of the RAP shall be completed on a schedule proposed by the Discharger(s) and agreed to in writing by the Regional Board.

5. ***Monitoring and Evaluation -*** The Discharger(s) shall monitor, evaluate, and report the results of implementation of the RAP on a schedule proposed by the Discharger(s) and agreed to in writing by the Regional Board.

6. ***Modify or Suspend Cleanup Activities -*** The Discharger(s) shall modify or suspend cleanup activities when directed to do so by the Regional Board.

F. CLEANUP AND ABATEMENT COMPLETION VERIFICATION

1. ***Cleanup and Abatement Completion Report -*** The Discharger(s) shall submit a final Cleanup and Abatement Completion Report verifying completion of the Remedial Action Plan (RAP) through sampling or other monitoring of the soil, ground water, and SWCS for a period of at least one year. The monitoring period shall begin immediately after the completion of remedial action measures and be conducted at intervals proposed by the Discharger(s) and agreed to by the Regional Board. The report shall provide a demonstration, based on a sound technical analysis, that:

   a. Cleanup levels for all waste constituents are attained at all monitoring points and throughout the zone affected by the waste constituents, including any portions thereof that extend beyond the Site boundary; and

   b. Illicit waste discharges into and through the storm water conveyance system (SWCS) at the Site are terminated and compliance is achieved with the terms and conditions of Order No. 97-03-DWQ, General Permit No. CAG000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity Excluding Construction Activities*.

2. ***Regional Board Concurrence -*** Upon concurrence with the findings of the Cleanup and Abatement Completion Report that remedial actions are complete and that compliance with this Cleanup and Abatement Order is achieved, the Regional Board will inform the Discharger(s) and other interested persons in writing that no further remedial work is required at this time, based on available information. This written notice shall constitute Regional Board concurrence with the completed remedial actions.

G. PROVISIONS

1. ***Duty to Comply -*** The Discharger(s) shall properly manage, treat, and/or dispose of contaminated soils and ground water in accordance with applicable federal, state, and local laws and regulations.

2. ***Request to Provide Information -*** The Discharger(s) may present characterization data, preliminary interpretations and conclusions as they become available, rather than waiting until a final report is prepared. This type of on-going reporting can facilitate a consensus being reached between the Discharger(s) and the Regional Board and may result in overall reduction of the time necessary for regulatory approval.

3. ***Waste Constituent Analysis -*** Unless otherwise permitted by the Regional Board, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Specific methods of analysis must be identified. If the Discharger(s) proposes to use methods or test procedures other than those included in the

most current version of *"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846"* (U.S. Environmental Protection Agency) or 40 CFR 136, "*Guidelines Establishing Test Procedures for the Analysis of Pollutants; Procedures for Detection and Quantification* ", the exact methodology must be submitted for review and must be approved by the Regional Board prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports submitted to the Regional Board.

4. ***Duty to Use Registered Professionals -*** The Discharger(s) shall provide documentation that plans and reports required under this Order are prepared under the direction of appropriately qualified professionals. California Business and Professions Code Sections 6735, 7835 and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals. A statement of qualifications and registration numbers of the responsible lead professionals shall be included in all plans and reports submitted by the Discharger(s). The lead professional shall sign and affix their registration stamp to the report, plan or document.

5. ***Corporate Signatory Requirements –*** All reports required under this Order shall be signed and certified by a responsible corporate officer(s) of the Discharger(s) described in paragraph 5.a. of this provision or by a duly authorized representative of that person as described in paragraph 5.b.of this provision.

   a. *Responsible Corporate Officer(s)* - For the purposes of this provision, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy - or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

   b. *Duly Authorized Representative* - A person is a duly authorized representative only if:
      (1) The authorization is made in writing by a person described in paragraph (a) of this provision;
      (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The written authorization is submitted to the Regional Board.

c. *Changes to Authorization* - If an authorization under paragraph (b) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this provision must be submitted to the Regional Board prior to or together with any reports or information to be signed by an authorized representative.

d. *Certification Statement* - Any person signing a document under paragraph a. or b. of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

6. ***Report Submittals:*** All monitoring and technical reports required under this Cleanup and Abatement order shall be submitted to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

7. ***Identify Documents Using Code Number -*** In order to assist the Regional Board in the processing of correspondence and reports submitted in compliance with this Cleanup and Abatement Order, the Discharger(s) shall include the following code number in the header or subject line portion of all correspondence or reports submitted to the Regional Board:

ICU: 02-0381.05.

H. NOTIFICATIONS

1. ***Cost Recovery -*** Pursuant to California Water Code Section 13304(c), the Regional Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by the Order.

2. ***Enforcement Notification-*** Pursuant to California Water Code Section 13350, the Regional Board may administratively impose civil liability on any person who violates a cleanup and abatement order, in an amount of not less than five hundred dollars ($500) or more than five thousand dollars ($5,000), for each day in which the cleanup and abatement order is violated.

3. ***Enforcement Notification -*** Pursuant to California Water Code Section 13385, the Regional Board may administratively impose civil liability on any person who violates a cleanup and abatement order, for an activity subject to regulation under Division 7, Chapter 5.5 of the California Water Code may be liable civilly in an amount of up to ten thousand dollars ($10,000) for each day in which the cleanup and abatement order is violated.

I, John H. Robertus, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of a Cleanup and Abatement Order issued on October 4, 2004

John H. Robertus
Executive Officer